

AMENDMENT

Please amend the above-captioned application as follows:

In the claims

Please amend the claims as follows:

1. (Amended) A composition comprising a nucleic acid or an analog or mimetic thereof, a polysaccharide or an analog or mimetic thereof, a lipid or an analog or mimetic thereof, a peptidomimetic or a small molecule modified by reaction with a compound having the formula: $R_1 - X - R_2$, wherein R_1 comprises a cyclic ether group or an amino group, R_2 comprises an alkoxy silane group and X comprises a moiety for linking the cyclic ether group or the amino group to the alkoxy silane group.
2. (Amended) The composition of claim 1, wherein the cyclic ether comprises a compound comprising an epoxide group.
3. (Amended) The composition of claim 2, wherein the epoxide comprises ethylene oxide.
4. (Amended) The composition of claim 1, wherein the cyclic ether comprises an oxirane group.
5. (Amended) The composition of claim 1, wherein the cyclic ether comprises a compound comprising an aromatic hydrocarbon epoxide group.
6. (Amended) The composition of claim 1, wherein the R_1 group reacts with the nucleic acid or an analog or mimetic thereof, the polysaccharide or an analog or mimetic thereof, a peptide or a peptidomimetic or a small molecule modified by reaction with a compound having the formula: $R_1 - X - R_2$, wherein R_1 comprises a cyclic ether group or an amino group, R_2 comprises an alkoxy silane group and X comprises a moiety for linking the cyclic ether group or the amino group to the alkoxy silane group.
7. (Amended) The composition of claim 6, wherein the nucleic acid or an analog or mimetic thereof, the polysaccharide or an analog or mimetic thereof, a peptide or a peptidomimetic or a small molecule modified by reaction with a compound having the formula: $R_1 - X - R_2$, wherein R_1 comprises a cyclic ether group or an amino group, R_2 comprises an alkoxy silane group and X comprises a moiety for linking the cyclic ether group or the amino group to the alkoxy silane group, is bound to the nucleic acid or an analog or mimetic thereof, the polysaccharide or an analog or mimetic thereof, a peptide or a peptidomimetic or a small molecule modified by reaction with a compound having the formula: $R_1 - X - R_2$, wherein R_1 comprises a cyclic ether group or an amino group, R_2 comprises an alkoxy silane group and X comprises a moiety for linking the cyclic ether group or the amino group to the alkoxy silane group.

mimetic thereof, the lipid or an analog or mimetic thereof, the peptidomimetic or the small molecule.

8. (Amended) The composition of claim 1, wherein the composition comprises a modified peptidomimetic.

9. (Amended) The composition of claim 1, wherein the composition comprises a modified polysaccharide or an analog or a mimetic thereof.

10. (Amended) The composition of claim 1, wherein the composition comprises a modified lipid or an analog or a mimetic thereof.

11. (Amended) The composition of claim 1, wherein the composition comprises a modified small molecule.

12. (Amended) The composition of claim 1, wherein the composition comprises a modified nucleic acid or an analog or mimetic thereof.

13. (Amended) The composition of claim 12, wherein the nucleic acid comprises a DNA or an RNA.

14. (Amended) The composition of claim 12, wherein the nucleic acid reacts with the R₁ group at its 5' end.

15. (Amended) The composition of claim 12, wherein the nucleic acid is an

16. (Amended) The composition of claim 12, wherein the nucleic acid has a telomeric structure.

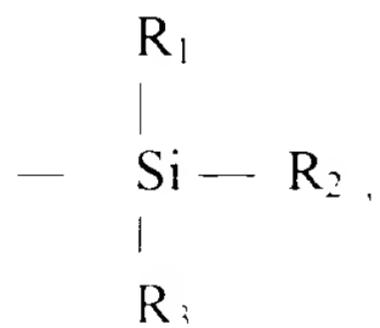
17. (Amended) The composition of claim 12, wherein the nucleic acid comprises a chromatin structure.

18. (Amended) The composition of claim 1, wherein cyclic ether comprises an epoxide group and the alkoxysilane is —Si(OCH₃)₃, —Si(OC₂H₅)₃, —Si(OCH₃)H₂, —Si(OCH₃)(CH₃)₂, or —Si(OCH₃)₂CH₃.

19. (Amended) The composition of claim 1, wherein cyclic ether comprises an epoxide group and the compound is 3-glycidoxypolytrimethoxysilane (GPTS).

20. (Amended) The composition of claim 1, wherein the R₁ amino group comprises a primary amino group.

21. (Amended) The composition of claim 1, wherein R₁ comprises an amino group and the alkoxysilane is selected from the group consisting of —Si(OCH₃)₃, —Si(OC₂H₅)₃ and



wherein R₁, R₂ and R₃ are selected from the group consisting of —H, —CH₃, —OCH₃, and —OC₂H₅, and provided that at least one of R₁, R₂ or R₃ is either —OCH₃ or —OC₂H₅.

22. (Amended) The composition of claim 1, wherein R₁ comprises an amino

group and the alkoxysilane is

82. (Amended) A method for inducing a biological response in a cell, comprising:

- (a) providing a biological molecule;

(b) providing a compound having the formula: $R_1 - X - R_2$, wherein R_1 comprises an amino group, R_2 comprises an alkoxysilane group and X comprises a moiety chemically suitable for linking the cyclic ether group or the amino group to the alkoxysilane group; and

(c) reacting the biological molecule with the compound, thereby modifying the biological molecule with the compound.

83. (Amended) A method for making an article of manufacture comprising an arrayed plurality of biological molecules covalently bound to a surface comprising

- (a) providing a biological molecule;
- (b) providing a compound having the formula: $R_1 - X - R_2$, wherein R_1 comprises a cyclic ether group or an amino group, R_2 comprises an alkoxysilane group and X comprises a moiety chemically suitable for linking the cyclic ether group or the amino group to the alkoxysilane group;
- (c) providing a surface comprising hydroxyl groups;
- (d) reacting the biological molecule with the compound, thereby modifying the biological molecule with the compound; and
- (e) depositing a plurality of modified biological molecules on the surface as discrete clusters, wherein a modified biological molecule is attached to the surface on at least one discrete and known location to form a cluster of substantially identical biological molecules and the array comprises a plurality of clusters.

Please add the following new claims:

- 84. (NEW) A modified biological molecule comprising a biological molecule modified by reaction with a compound having the formula: $R_1 - X - R_2$, wherein R_1 the alkoxysilane group and the cyclic ether comprises an oxiridic group.

85. (NEW) A modified biological molecule comprising a biological molecule modified by reaction with a compound having the formula: $R_1 - X - R_2$, wherein R_1 comprises a cyclic ether group or an amino group, R_2 comprises an alkoxysilane group and X comprises a moiety chemically suitable for linking the cyclic ether group or the amino group to the alkoxysilane group and the cyclic ether comprises a compound comprising an aromatic hydrocarbon epoxide group.

86. (NEW) A modified biological molecule comprising a biological molecule modified by reaction with a compound having the formula: $R_1 - X - R_2$, wherein R_1 comprises a cyclic ether group or an amino group, R_2 comprises an alkoxysilane group and X comprises a moiety chemically suitable for linking the cyclic ether group or the amino group to the alkoxysilane group and the R_1 group reacts with the biological molecule.

87. (NEW) A modified biological molecule comprising a biological molecule modified by reaction with a compound having the formula: $R_1 - X - R_2$, wherein R_1 comprises a cyclic ether group or an amino group, R_2 comprises an alkoxysilane group and X comprises a moiety chemically suitable for linking the cyclic ether group or the amino group to the alkoxysilane group and the R_1 group is covalently bound to the biological molecule.

88. (NEW) A modified biological molecule comprising a biological molecule modified by reaction with a compound having the formula: $R_1 - X - R_2$, wherein R_1 comprises a cyclic ether group or an amino group, R_2 comprises an alkoxysilane group and X comprises a moiety chemically suitable for linking the cyclic ether group or the amino group to the alkoxysilane group and the biological molecule comprises a nucleic acid or an analog or mimetic thereof.

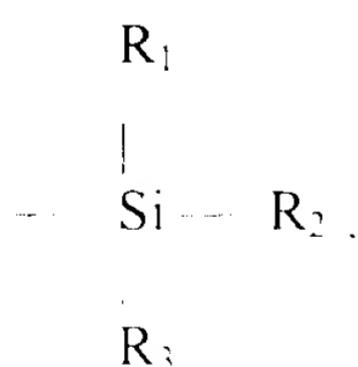
90. (NEW) The modified biological molecule of claim 88, wherein the nucleic acid reacts with the R₁ group at its 5' end.

91. (NEW) The modified biological molecule of claim 88, wherein the nucleic acid is an oligonucleotide.

92. (NEW) The modified biological molecule of claim 88, wherein the nucleic acid comprises a telomeric structure.

93. (NEW) The modified biological molecule of claim 88, wherein the nucleic acid comprises a chromatin structure.

94. (NEW) A modified biological molecule comprising a biological molecule modified by reaction with a compound having the formula: R₁ — X — R₂, wherein R₁ comprises an amino group, R₂ comprises an alkoxy silane group and X comprises a moiety chemically suitable for linking the amino group to the alkoxy silane group and the alkoxy silane is selected from the group consisting of —Si(OCH₃)₃, —Si(OC₂H₅)₃ and



wherein R₁, R₂ and R₃ are selected from the group consisting of —H, —CH₃, —OCH₃, and —OC₂H₅, and provided that at least one of R₁, R₂ or R₃ is either —OCH₃ or —OC₂H₅.

group, R₂ comprises an alkoxy silane group and X comprises a moiety chemically suitable for linking the amino group to the alkoxy silane group.

96. (NEW) The composition of claim 95, wherein the biological molecule comprises a polypeptide, a peptide or a peptidomimetic.

97. (NEW) The composition of claim 95, wherein the biological molecule comprises a polysaccharide, or an analog or a mimetic thereof.

98. (NEW) The composition of claim 95, wherein the biological molecule comprises a lipid, or an analog or a mimetic thereof.

99. (NEW) The composition of claim 95, wherein the biological molecule comprises a small molecule.

100. (NEW) The composition of claim 95, wherein the biological molecule comprises a nucleic acid or an analog or mimetic thereof.

101. (NEW) The composition of claim 100, wherein the nucleic acid comprises a DNA or an RNA.

102. (NEW) An article of manufacture comprising a plurality of biological molecules covalently bound to a surface, wherein, before attachment to the surface, the biological molecules are modified by reaction with a compound having the formula: $R_1 - X - R_2$, wherein R_1 comprises an amino group, R_2 comprises an alkoxysilane group and X comprises a moiety chemically suitable for linking the amino group to the alkoxysilane group, and upon attachment to the surface the modified biological molecules are covalently bound to a

103. (NEW) A method for making an article of manufacture comprising biological molecules covalently bound to a surface comprising

(a) providing a biodegradable polymer

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- (b) providing a compound having the formula: $R_1 — X — R_2$, wherein R_1 comprises an amino group, R_2 comprises an alkoxy silane group and X comprises a moiety chemically suitable for linking the amino group to the alkoxy silane group;
- (c) providing a surface comprising hydroxyl groups;
- (d) reacting the biological molecule with the compound, thereby modifying the biological molecule with the compound; and
- (e) depositing a plurality of modified biological molecules on a surface of the article of manufacture.--